

## ABSTRACT

A motor that is capable of both linear and rotational motion. One coil translates the motor along its axis for linear motion and a second coil causes the shaft to rotate. Coacting with the translate coil is a translate magnet where the north and south poles are oriented along the motor shaft. A segmented magnet where alternating north and south poles are located along the periphery of the magnet interacts with a rotation coil so that the interaction of the magnetic field of the segmented magnet and the magnetic field produced by the rotation coil cause the rotary magnet to rotate. Rotation of the rotary magnet, which cooperates with the shaft to which it is operably connected, causes rotation of the motor shaft.